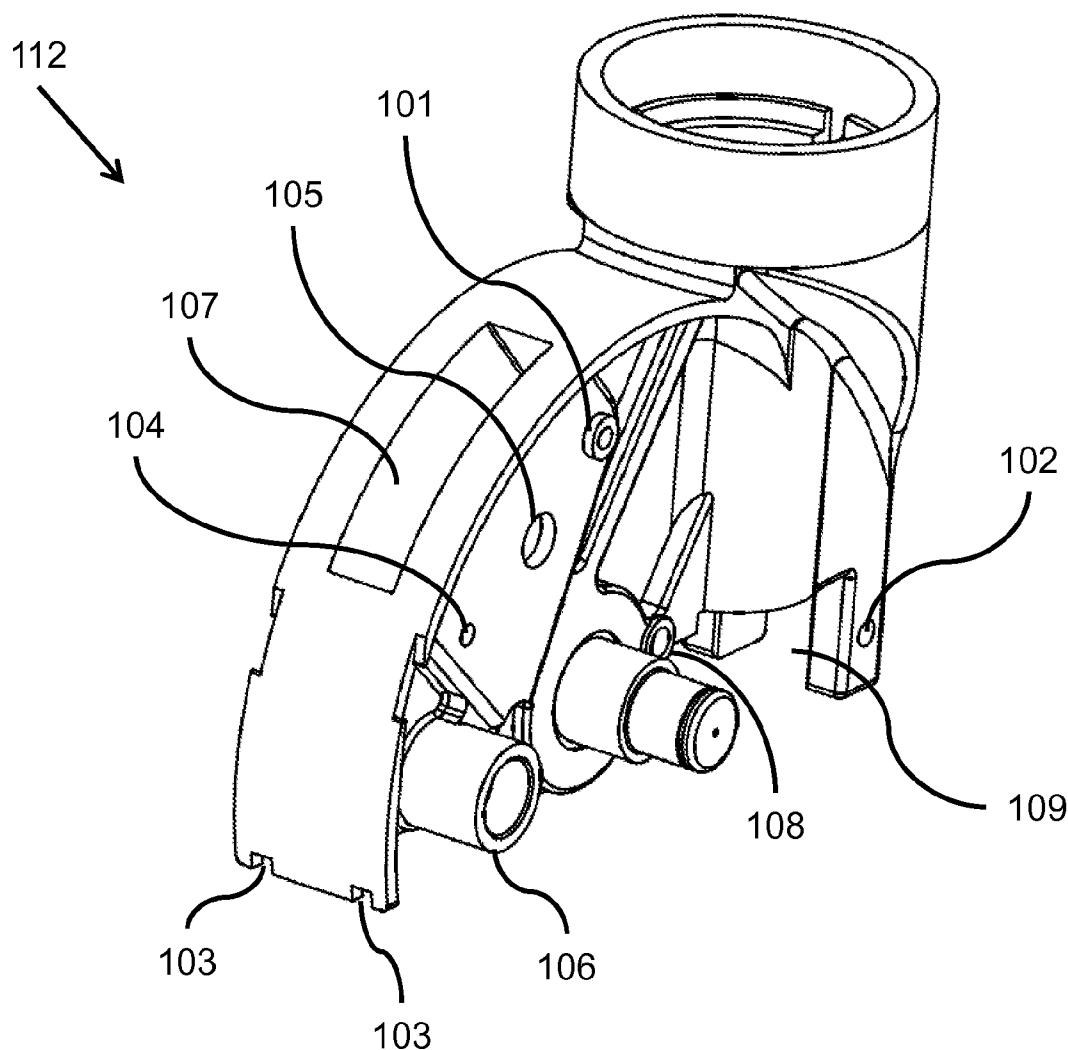




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(19) **United States**(12) **Patent Application Publication**
Steenson(10) **Pub. No.: US 2016/0221392 A1**(43) **Pub. Date: Aug. 4, 2016**(54) **CASTER YOKE FOR MANUFACTURE OF A
SET OF WHEELED CASTER ASSEMBLIES**(57) **ABSTRACT**(71) Applicant: **Darcor Limited**, Toronto (CA)(72) Inventor: **Adrian Steenson**, Mississauga (CA)(21) Appl. No.: **14/611,664**(22) Filed: **Feb. 2, 2015****Publication Classification**(51) **Int. Cl.**
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(2013.01); **B60B 2900/112** (2013.01); **B60B**
2900/116 (2013.01)

A caster yoke for use in the manufacture of a set of wheeled caster assemblies. Each wheeled caster assembly of the set of wheeled caster assemblies has unique functional capabilities relative to each other wheeled caster assembly of the set, which unique functional capabilities arise from a respective combination of one or more caster components mounted on the caster yoke. The caster yoke has all of the mounting features necessary to selectively mount all of the respective caster components of the set of wheeled caster assemblies on the caster yoke. In this manner, the same caster yoke may be used without modification of its structure as a key structural component common to the entire set of wheeled caster assemblies thereby significantly reducing production and inventory costs for the set of caster assemblies.



300

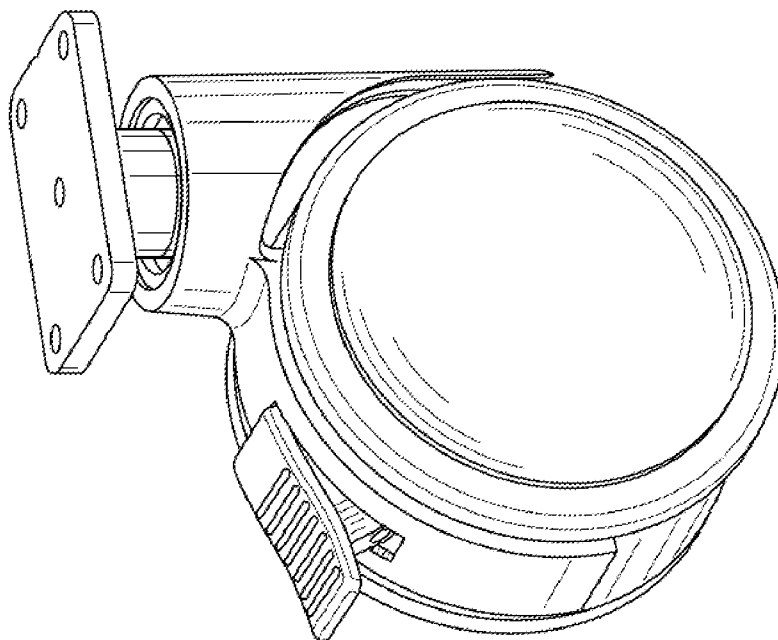


FIG. 1A

400

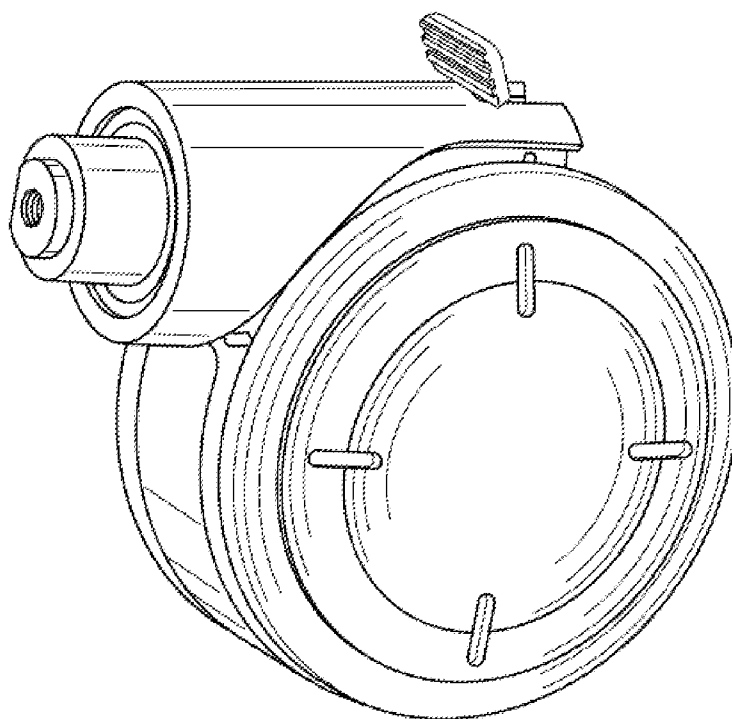


FIG. 1B

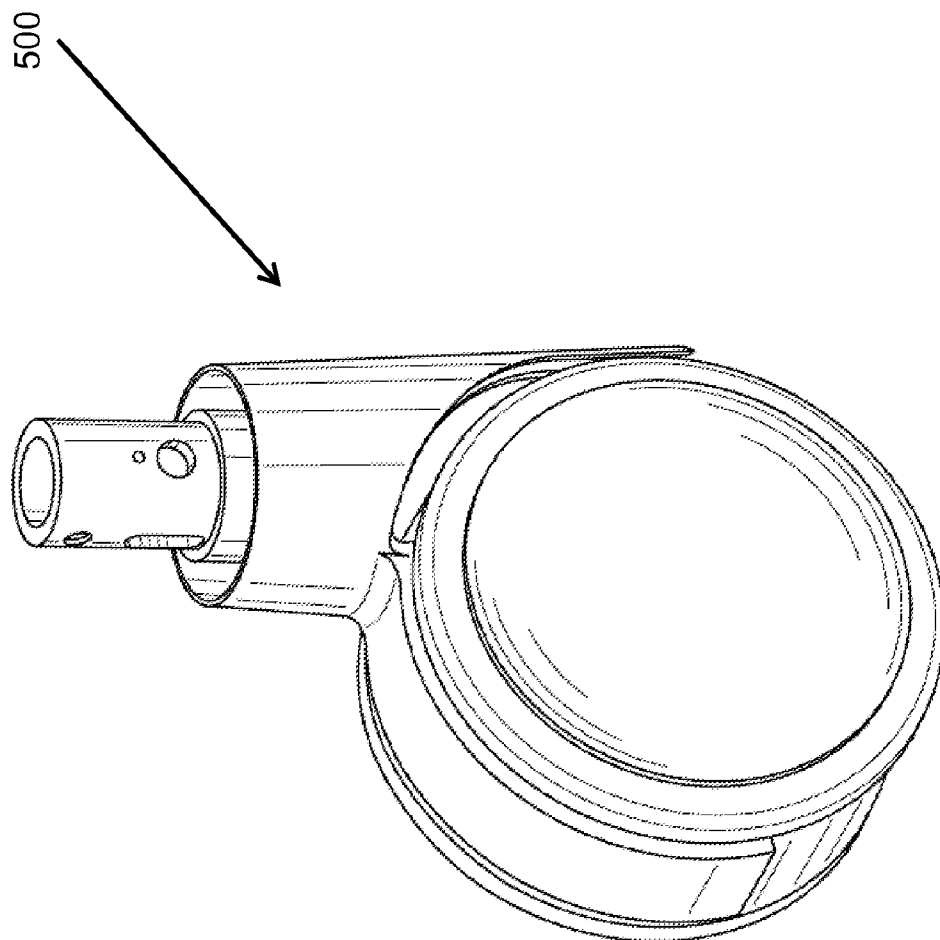
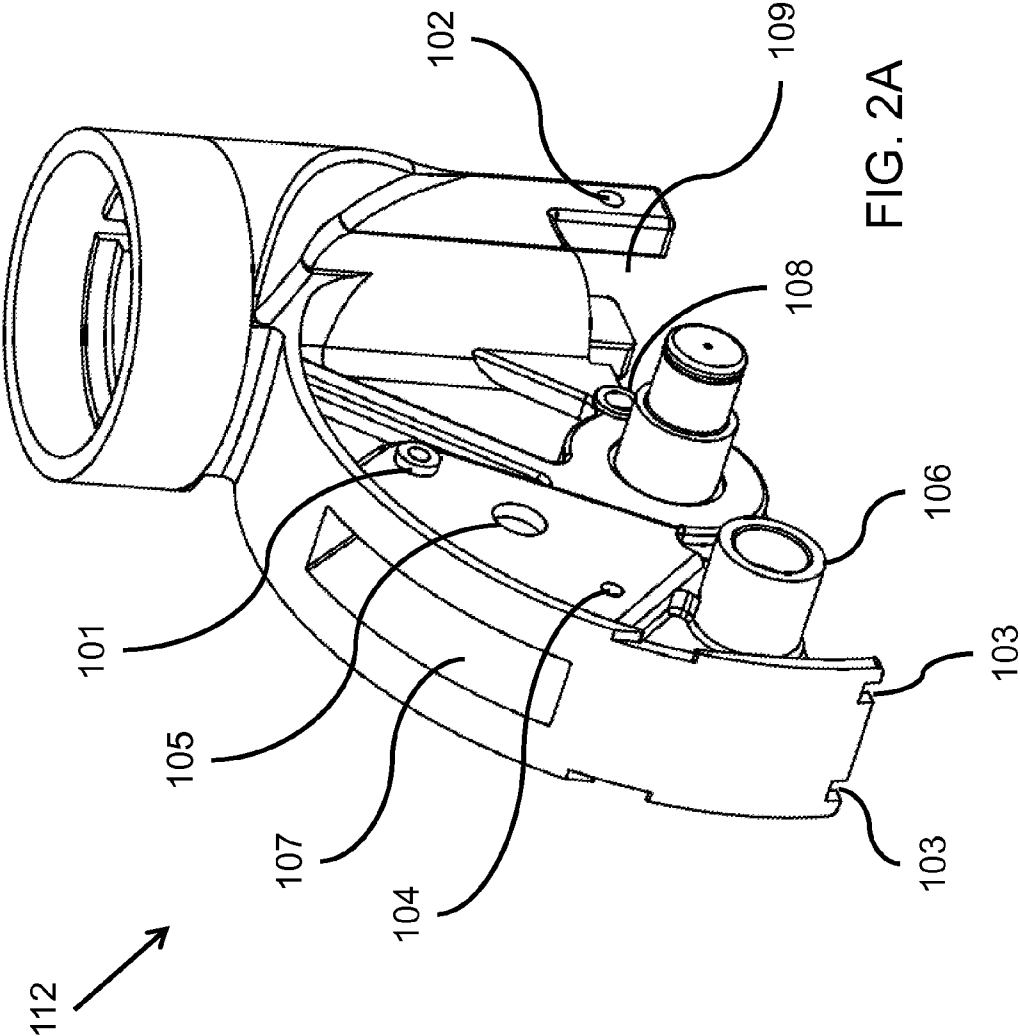
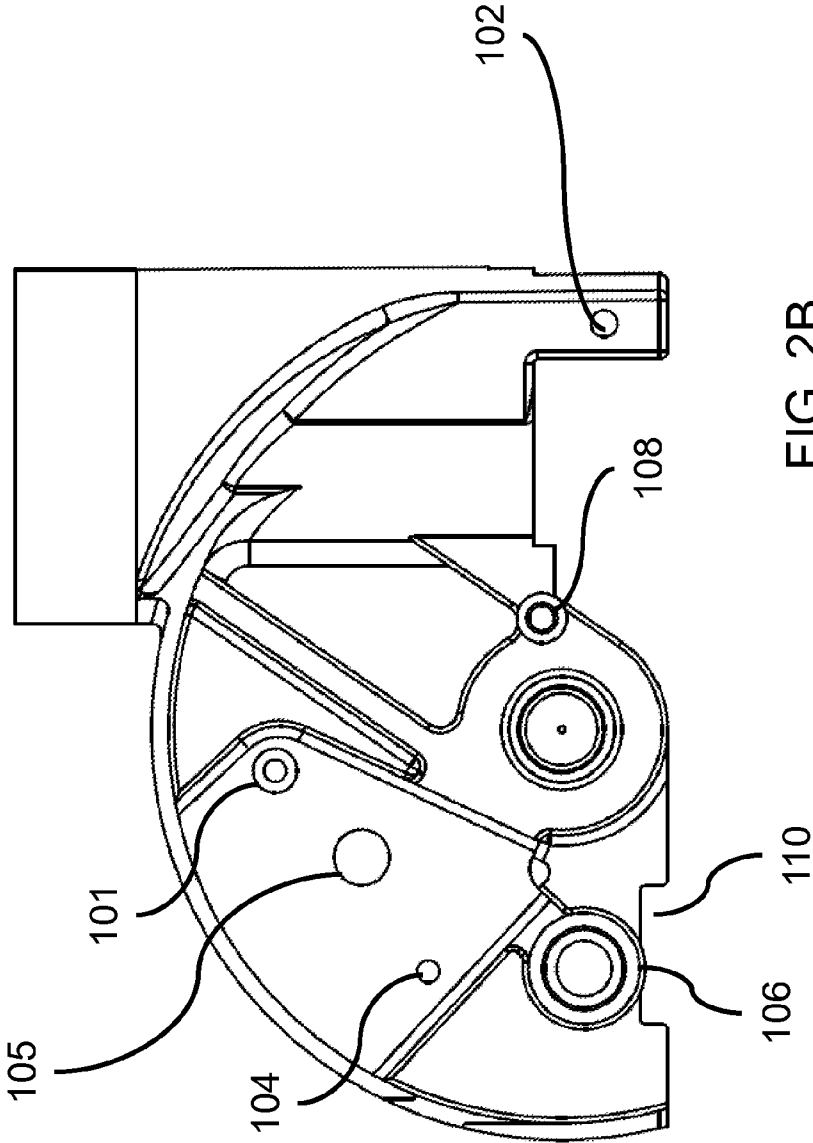
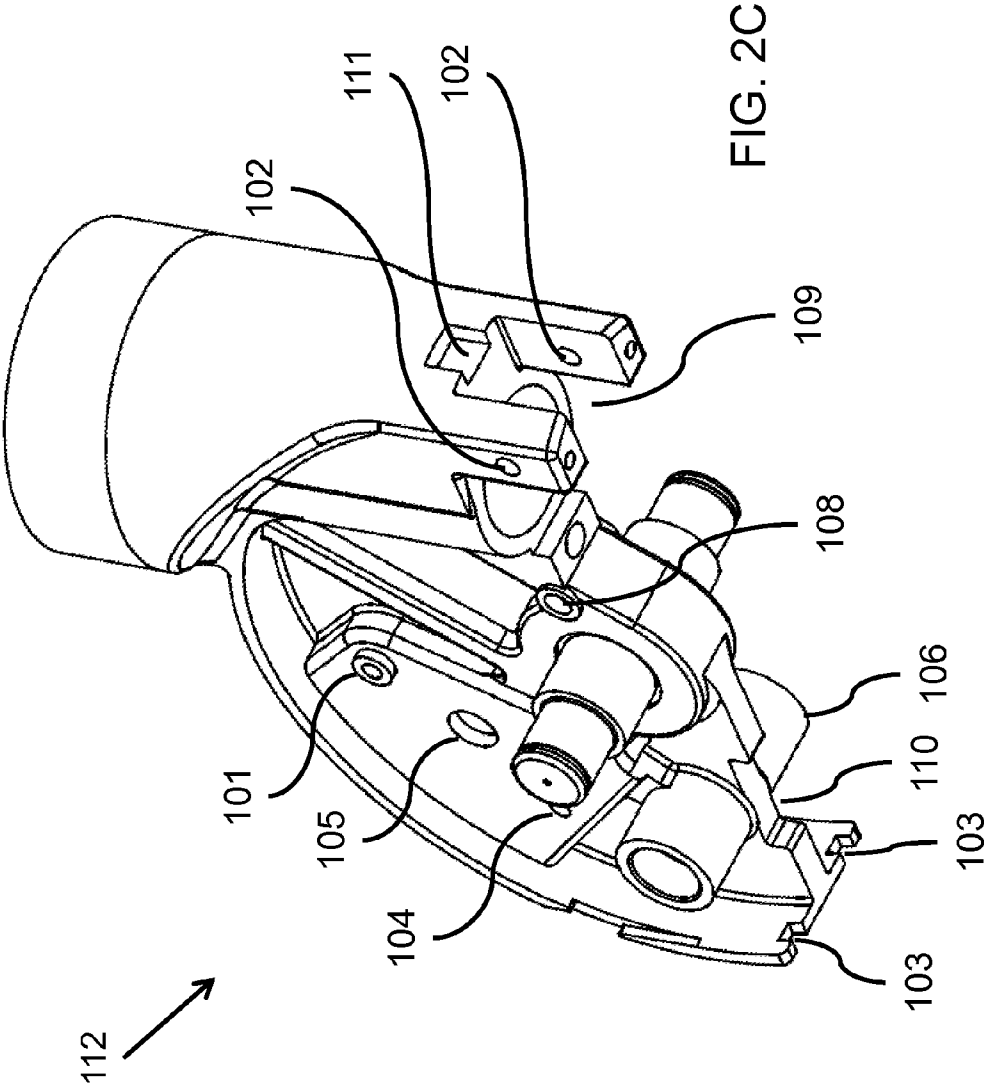


FIG. 1C



112 ↗





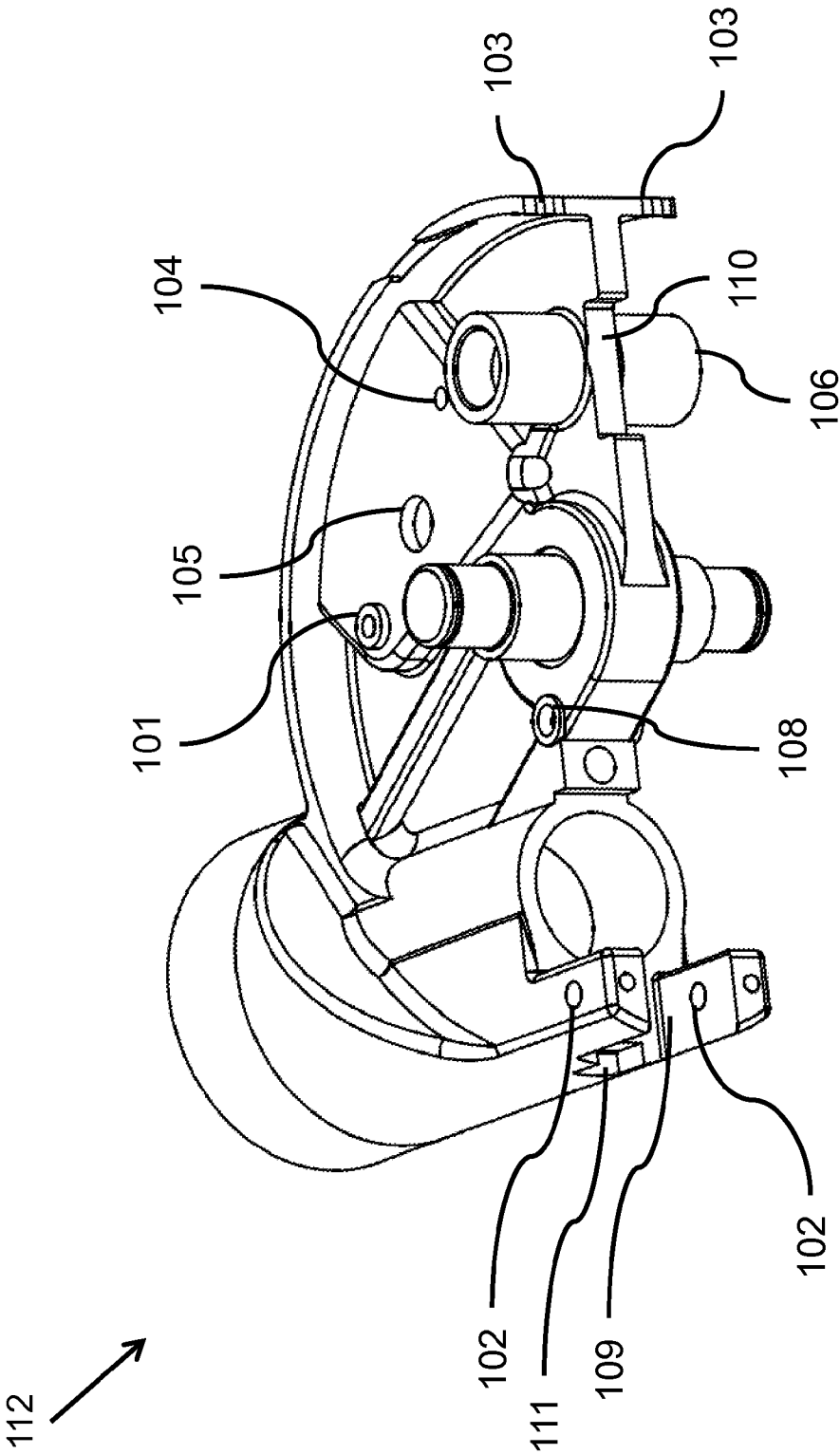


FIG. 2D

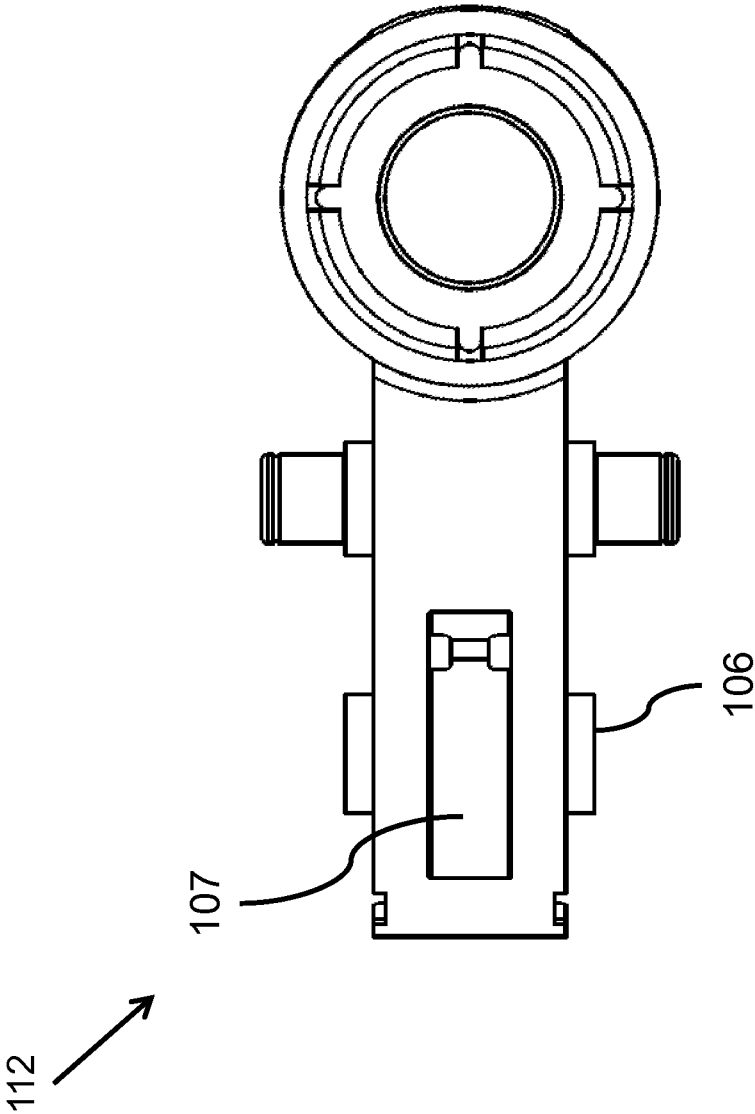


FIG. 2E

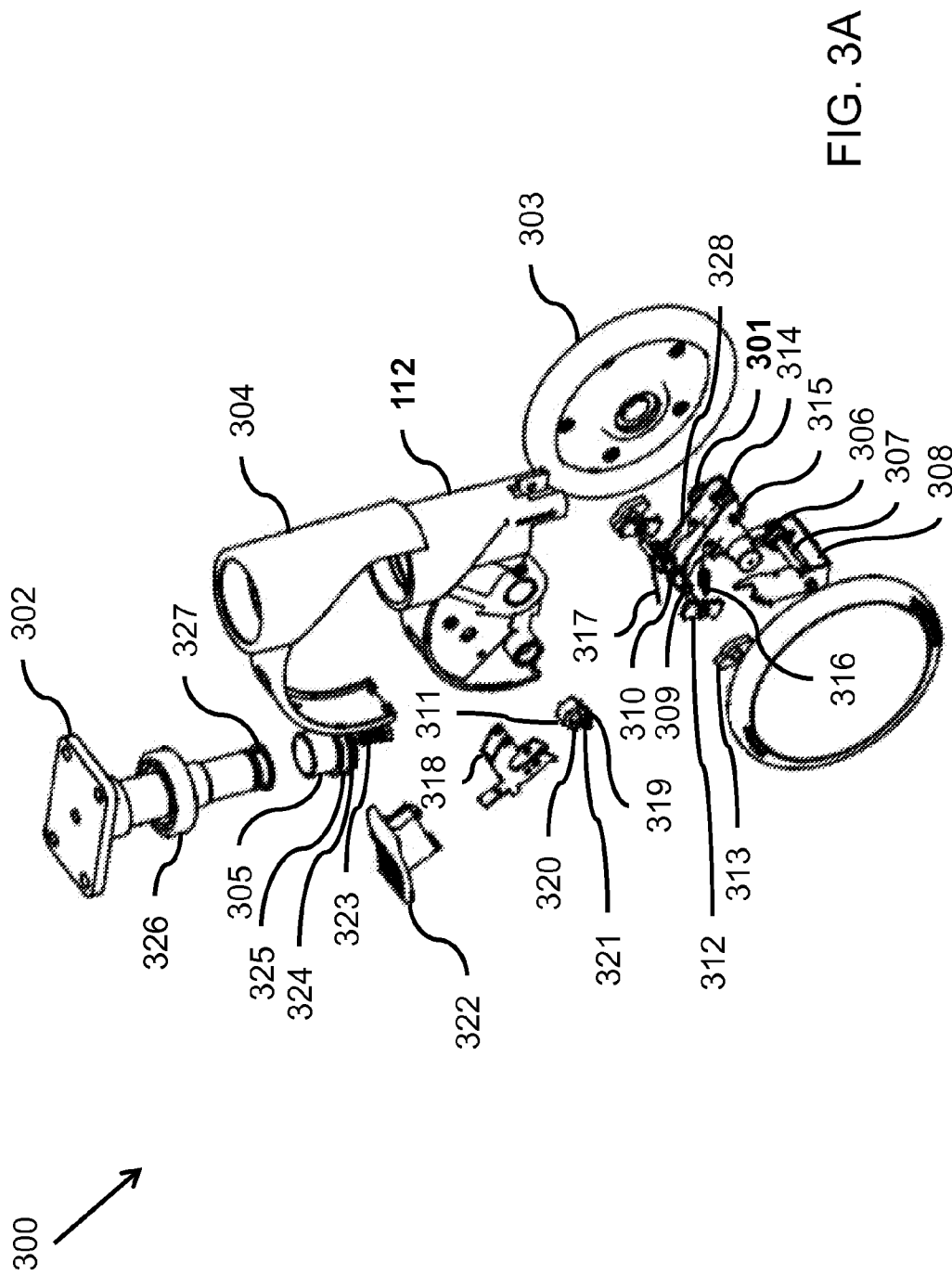
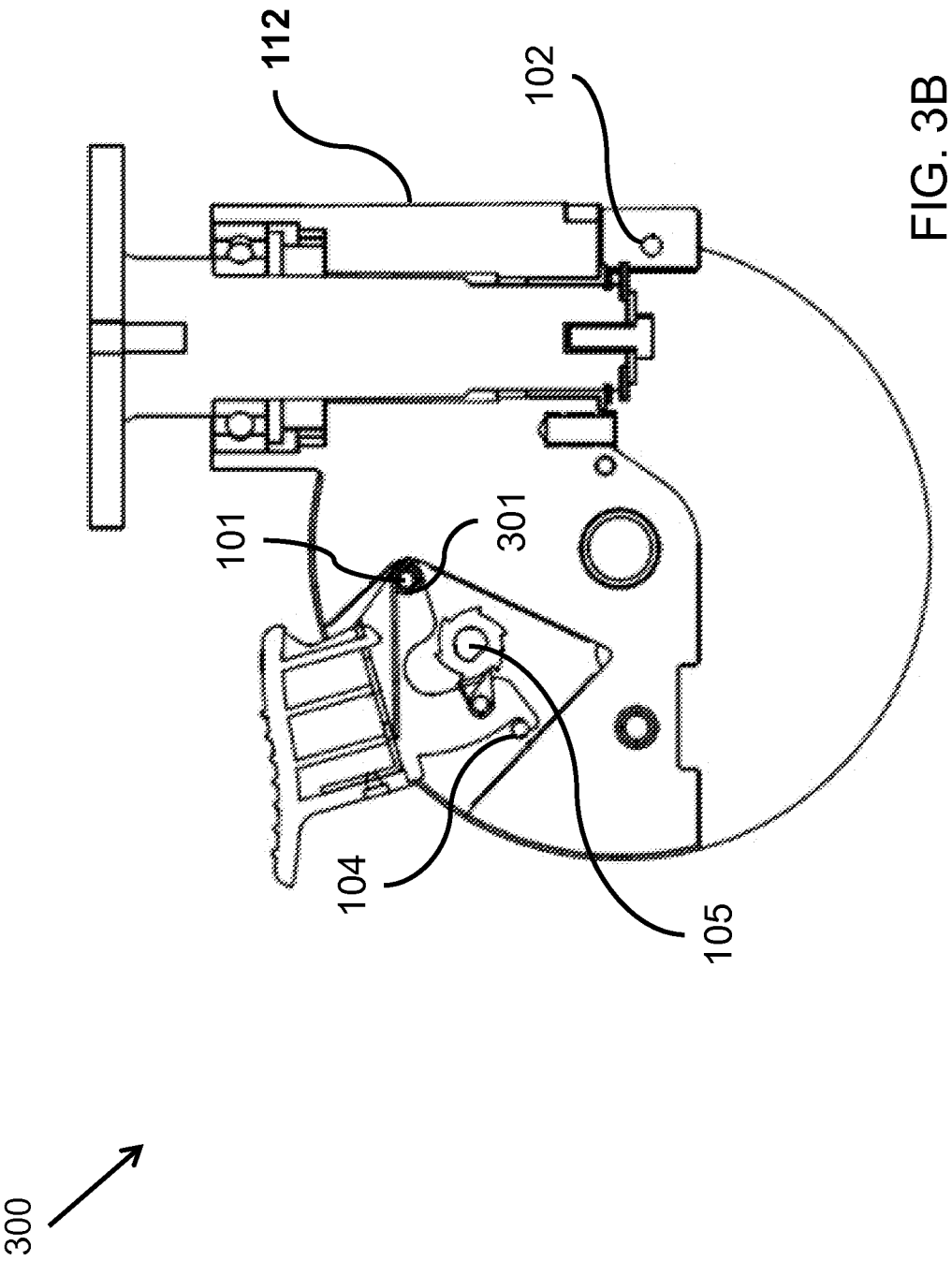
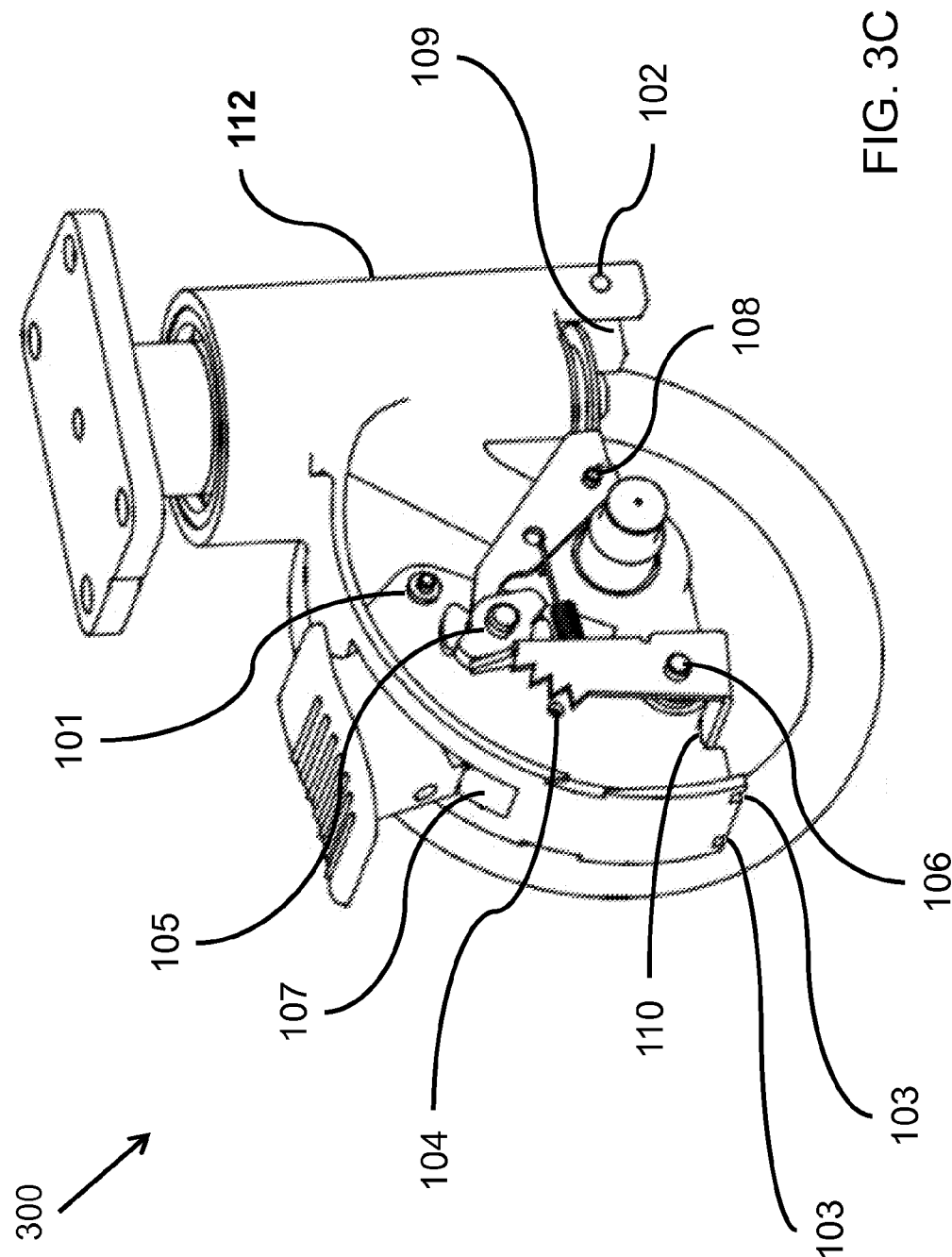


FIG. 3A





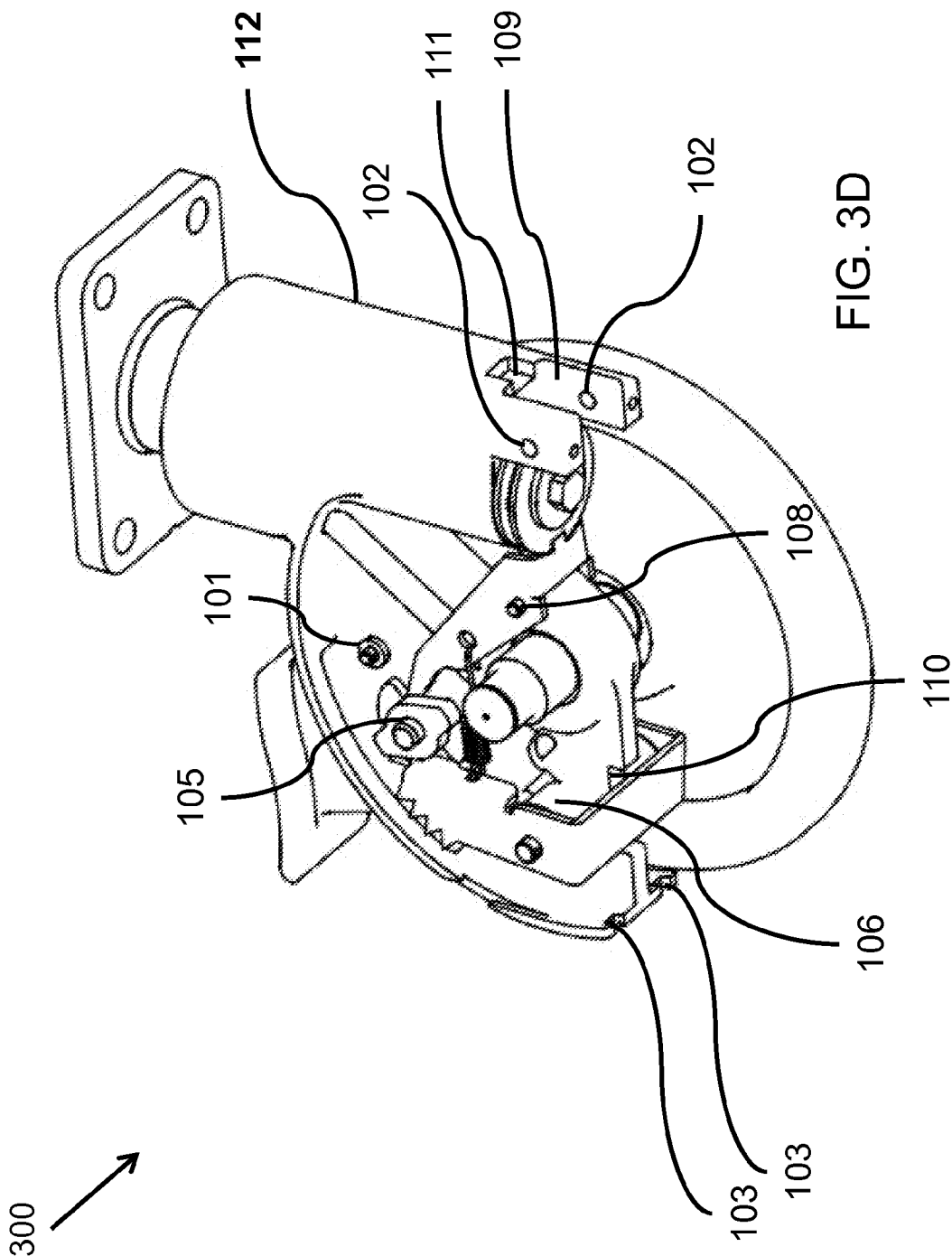
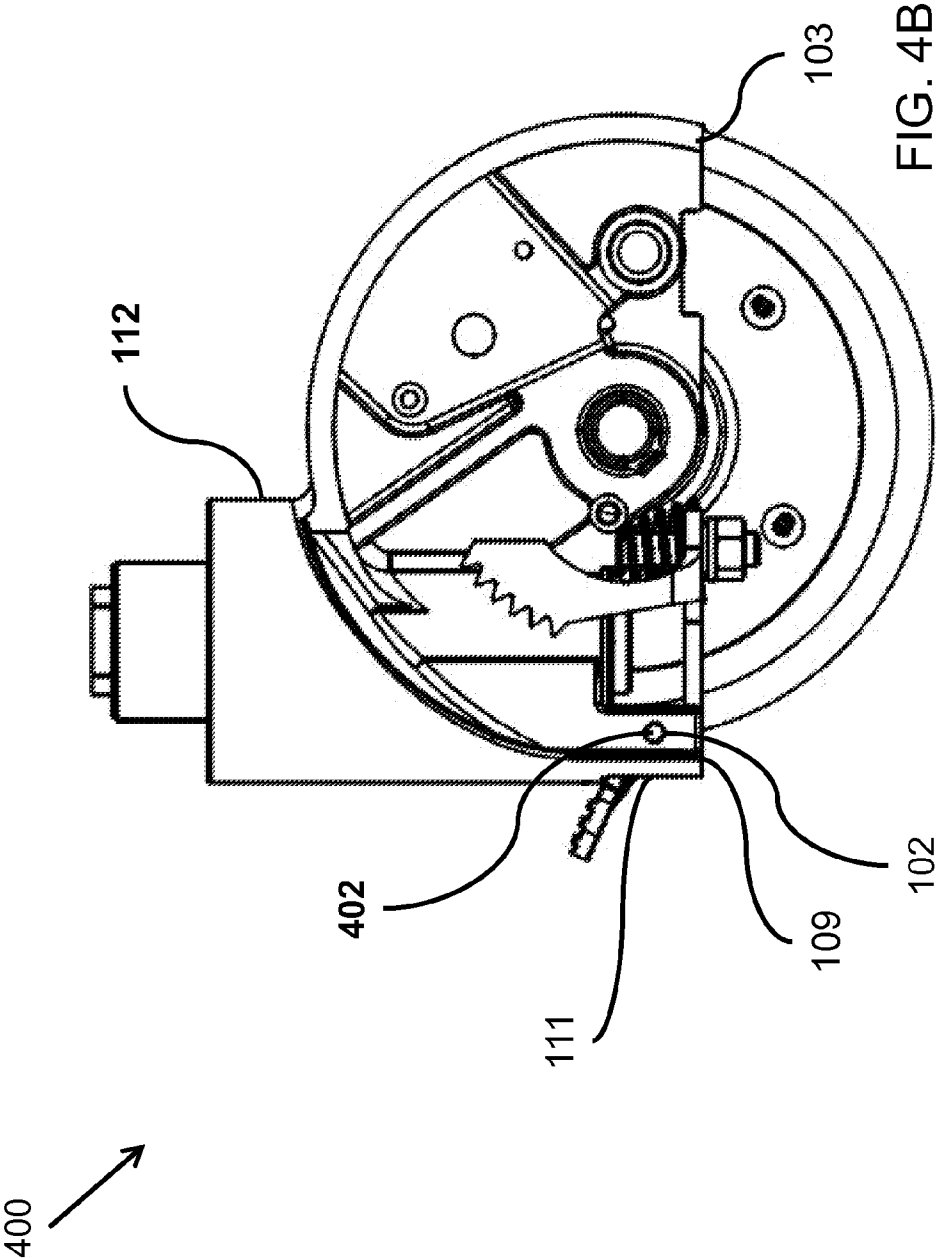
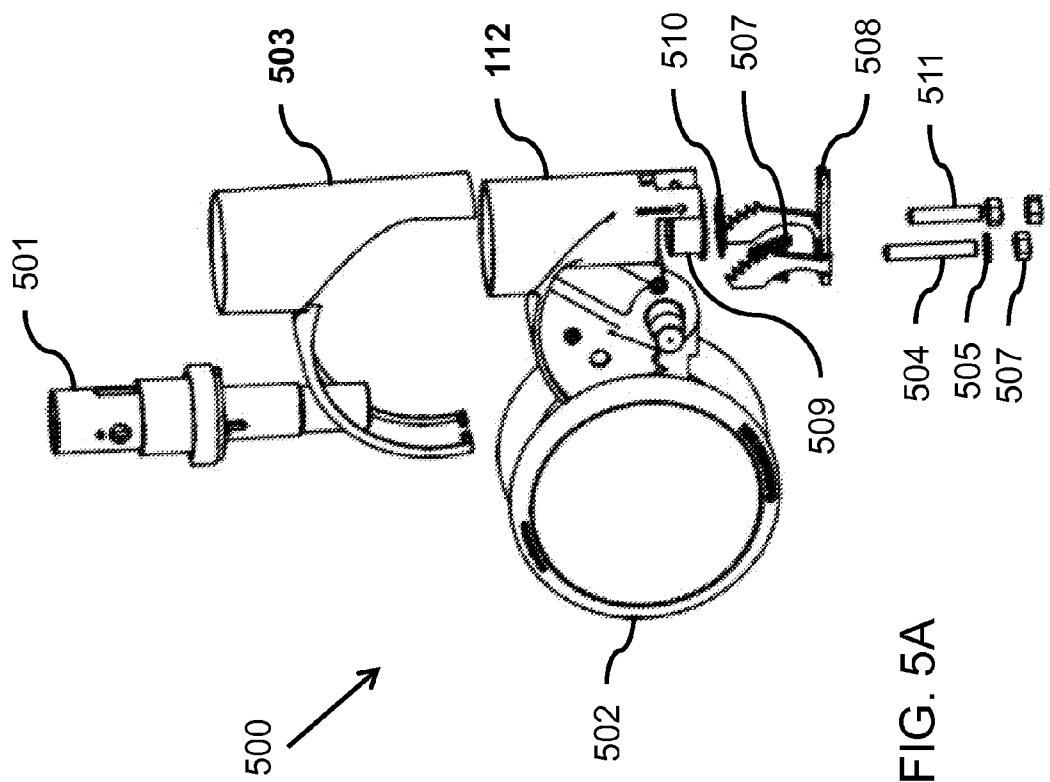
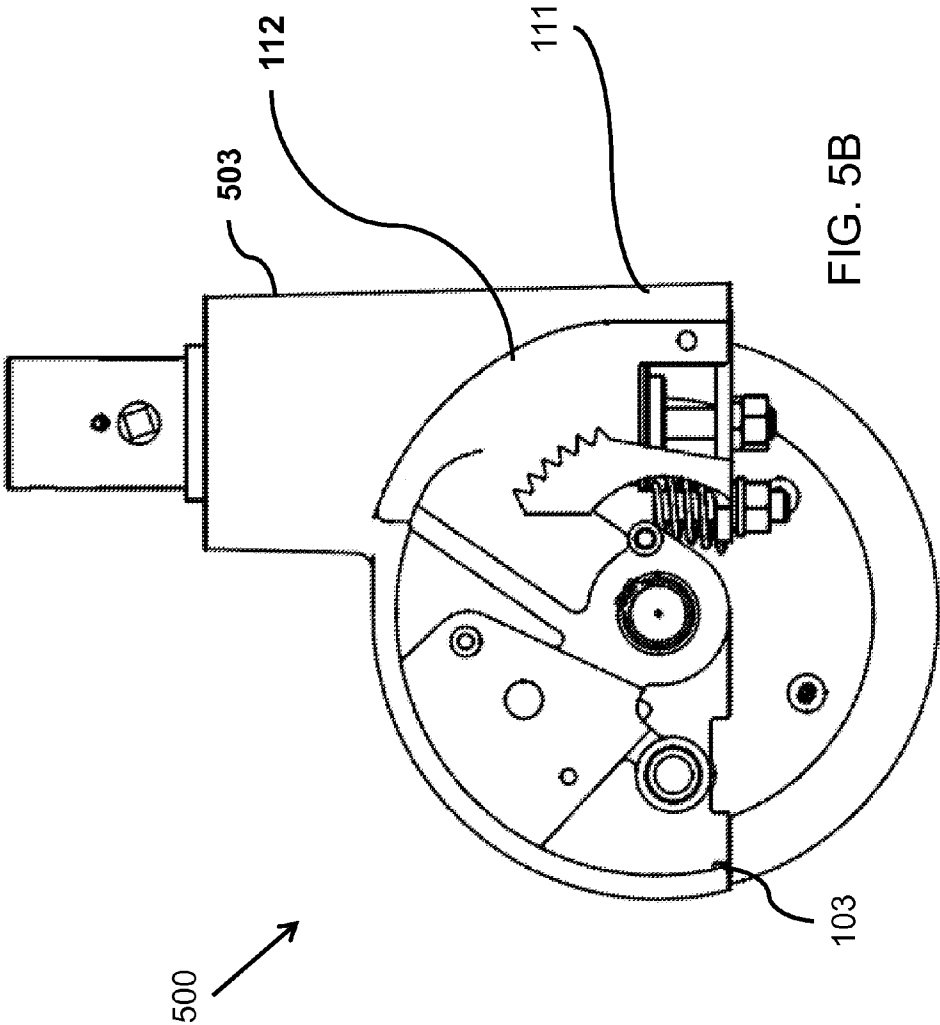


FIG. 4A







CASTER YOKE FOR MANUFACTURE OF A SET OF WHEELED CASTER ASSEMBLIES

TECHNICAL FIELD

[0001] The present invention relates to the field of wheeled caster assemblies and more particularly, according to one aspect of the invention, to a caster yoke that can be used to manufacture a set of wheeled caster assemblies with each member of the set having unique functional capabilities, all without the need to modify the caster yoke.

BACKGROUND OF THE INVENTION

[0002] Wheeled caster assemblies are generally well known in the art. Such wheeled casters are attached to a base or to the bottom of an object such as a bed, a stretcher, a gurney, a chair, a large piece of medical diagnostic equipment, a palette, a wagon, a cart, and the like. Wheeled caster assemblies are configured to provide translation (rolling movement) of the object along a surface or the ground (once attached to the object just so). In some configurations, the wheel(s) of the caster assembly may be fixed in a single orientation relative to the attached object to provide motion in a single forward and backward direction. In other configurations, the caster assembly includes a swivel that allows the caster assembly to rotate about a vertical axis. If all caster assemblies attached to the object are of this configuration, the object to which the caster assembly is attached is able to move in a lateral as well as a forward and backward motion. Different configurations are also well known with combinations of fixed and swivel-enabled caster assemblies attached to a single object.

[0003] Wheel brake and swivel brake assemblies for casters are also well known and have been provided in a variety of forms for many years. A wheel brake assembly is typically used to stop the motion of the wheel, such that the wheel is no longer able to rotate about a respective wheel axis. Wheel brake assemblies are often engaged when a user wishes the object to remain in a fixed position. If the caster assembly has a swivel function, the object may still be able to rotate about the wheel-braked caster assembly even though the wheel itself is not able to rotate.

[0004] Similarly, swivel brake assemblies have been designed to lock a swivel-enabled caster assembly in a fixed orientation such that the caster assembly is unable to swivel about the vertical axis. Swivel brake assemblies are commonly used when a user wishes to translate the object in a fixed direction, such as forward or backwards relative to the object, without having to exert the additional effort to steer. As only the swivel has been affected, the wheel of the caster assembly is still free to rotate about the wheel axis. Furthermore, objects having fixed caster assemblies oriented in the same direction will generally travel in a straight line.

[0005] Finally, a combination of a wheel brake and swivel brake assemblies in a caster assembly are known to simultaneously engage a wheel brake and a swivel brake using a single stopping actuator. With such a single actuator, the user is able with a single motion able to stop both the rotation of the caster assembly's wheel about the wheel axis and to stop the rotation of the swivel about the vertical axis.

[0006] While various combinations of these wheel and swivel brake assemblies and their associated functionalities are required in the art, each combination typically presents a challenge to combine together into a caster assembly that

meets the space, actuation and service requirements of modern equipment manufacturers who incorporate caster assemblies into their products. As a result, it is required, in many cases, to custom design the various components of a caster assembly to meet the unique functional requirements of such manufacturers. That is, for example, a wheeled caster assembly required to have both a wheel brake lock assembly and a fixed-direction swivel lock assembly will, in the prior art, be constructed from caster components that may be significantly different than the caster components used to construct a unique caster assembly configuration having all three of a wheel brake lock assembly, a fixed-direction swivel lock assembly and a full-directional swivel lock assembly.

[0007] One prior art wheeled caster assembly having caster components used to construct a unique caster configuration having a wheel brake lock assembly, a fixed-direction swivel lock assembly, and a full-directional swivel lock assembly is disclosed in U.S. Pat. No. 8,424,158 (Stenson), which patent is hereby incorporated by reference. The wheeled caster assembly disclosed in U.S. Pat. No. 8,424,158 includes a caster yoke and a cam assembly operable in at least three operational (functional) states (modes). The cam assembly may include an actuating mechanism for operating the cam assembly, a swivel lever mechanism and a brake lever mechanism in communication with a cam. When in a first operational (functional) state (mode), the wheel rotates freely and the caster yoke swivels freely. When in a second operational (functional) state (mode), a first swivel brake is engaged by the swivel lever mechanism to lock the caster yoke in a predetermined orientation while the wheel is allowed to rotate freely. When in a third operational (functional) state (mode), a wheel brake is engaged by the brake lever mechanism to stop the wheel from rotating freely, and a second swivel brake is simultaneously engaged to stop the caster yoke from swivelling. While operatively effective in its various operational (functional) states (modes), it will be appreciated by those skilled in the art that the Stenson prior art caster assembly is both complex and expensive to manufacture. Most importantly, such high levels of complexity and expense cannot be justified for many applications where less operational (functional) states (modes) are required. Moreover, the Stenson prior art caster assembly is not readily adaptable to the production of caster assemblies having less operational (functional) states (modes) without extensive redesign of the various caster components utilized therein and of the associated tooling, facilities and other resources necessary to produce assemble and inventory such components. As a consequence, in order for a caster manufacturer to be able to offer its customers a full model line (set) of casters capable of offering all of the three different operational (functional) capabilities described above in their various combinations and permutations, it would be necessary for such manufacturer to construct and inventory as many as 9 different unique caster models, each having a plurality of parts unique to each model of the line (set).

[0008] Reducing the cost of manufacturing wheeled caster assemblies having different functionalities and inventorying the numerous different caster components used in their production represents an ongoing challenge for manufacturing efficiencies in response to continuing customer demands for reduced costs. Accordingly, there remains a need in the art for an improved and more economical wheeled caster assembly that may be produced from common caster components and

that may be assembled in selected combinations to form a set of wheeled caster assemblies each having unique operational (functional) capabilities.

SUMMARY OF THE INVENTION

[0009] It will be appreciated that there exists a need to mitigate (at least in part) at least one problem associated with existing wheeled caster assemblies. After much study of the known systems and methods with experimentation, and an understanding of the problem, its solution has been identified and is articulated hereinbelow.

[0010] To mitigate, at least in part, one or more problems associated with prior art wheeled caster assemblies, there is provided in accordance with an aspect of the present invention a novel and unobvious form of caster yoke, which caster yoke may be used to manufacture a complete set of wheeled caster assemblies, with each wheeled caster assembly of the set having unique functional capabilities, either alone or in combination with other unique functional capabilities, relative to each other wheeled caster assembly of the set. Each of these functional capabilities arises, in turn, from respective configurations of caster components being mountable on the caster yoke, with the caster yoke having all of the mounting features necessary to selectively mount all of the caster components of the set of wheeled caster assemblies on the caster yoke.

[0011] To mitigate, at least in part, at least one problem associated with existing wheeled caster assemblies, there is provided in accordance with another aspect of the present invention a caster yoke. The caster yoke is for constructing a set of wheeled caster assemblies. Each wheeled caster assembly of the set of wheeled caster assemblies has a unique functional capabilities relative to each other. The caster yoke includes (and is not limited to) mounting features. The mounting features are each (each mounting feature is) configured to selectively mount respective caster components of wheeled caster assemblies of the set of wheeled caster assemblies.

[0012] To mitigate, at least in part, at least one problem associated with existing wheeled caster assemblies, there is provided (in accordance with another aspect of the present invention a caster yoke for constructing a set of wheeled caster assemblies. For instance, the set of wheeled caster assemblies has (and is not limited to): (A) a first wheeled caster assembly including (and not limited to) a first caster component; (B) a second wheeled caster assembly including (and not limited to) a second caster component; and, (C) a third wheeled caster assembly including (and not limited to) a third caster component. The first wheeled caster assembly, the second wheeled caster assembly, and the third wheeled caster assembly each have unique functional capabilities relative to each other (once the caster yoke is deployed therein). The caster yoke includes (and is not limited to): a first mounting feature, a second mounting feature, and a third mounting feature. The first mounting feature is configured to selectively mount the first caster component of the first wheeled caster assembly. The second mounting feature is spaced apart from the first mounting feature. The second mounting feature is configured to selectively mount the second caster component of the second wheeled caster assembly. The third mounting feature is spaced apart from the first mounting feature and also from the second mounting feature. The third mounting feature is configured to selectively mount the third caster component of the third wheeled caster assembly. The set of

wheeled caster assemblies includes (and is not limited to) a caster yoke, a first wheeled caster assembly, a second wheeled caster assembly, and a third wheeled caster assembly. The caster yoke includes (and is not limited to) a first mounting feature, a second mounting feature, and a third mounting feature. The second mounting feature is spaced apart from the first mounting feature. The third mounting feature is spaced apart from the first mounting feature and also from the second mounting feature. The first wheeled caster assembly includes (and is not limited to) a first caster component configured to selectively mount the first mounting feature of the caster yoke. The second wheeled caster assembly includes (and is not limited to) a second caster component configured to selectively mount the second mounting feature of the caster yoke. The third wheeled caster assembly includes (and is not limited to) a third caster component configured to selectively mount the third mounting feature of the caster yoke. The first wheeled caster assembly, the second wheeled caster assembly, and the third wheeled caster assembly each having unique functional capabilities relative to each other.

[0013] Other aspects of the invention are identified in the claims.

[0014] Other aspects and features of the non-limiting embodiments may now become apparent to those skilled in the art upon review of the following detailed description of the non-limiting embodiments with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The non-limiting embodiments may be more fully appreciated by reference to the following detailed description of the non-limiting embodiments when taken in conjunction with the accompanying drawings, in which:

[0016] FIGS. 1A, 1B and 1C (SHEETS 1 TO 3 OF 16 SHEETS) depict perspective views of embodiments of a set of wheeled caster assemblies having a first wheeled caster assembly (depicted in FIG. 1A), a second wheeled caster assembly (depicted in FIG. 1B), and a third wheeled caster assembly (depicted in FIG. 1C);

[0017] FIGS. 2A, 2B, 2C, 2D and 2E (SHEETS 4 TO 8 OF 16 SHEETS) depict different views of a caster yoke commonly deployed with (used in the construction of) any one of the first wheeled caster assembly, the second wheeled caster assembly and the third wheeled caster assembly of FIGS. 1A, 1B and 1C. FIG. 2A depicts a front perspective view. FIG. 2B depicts a side view. FIG. 2C depicts a rear perspective view. FIG. 2D depicts a bottom perspective view. FIG. 2E depicts a top view.

[0018] FIGS. 3A to 3D (SHEETS 9 TO 12 OF 16 SHEETS) depict views of the first wheeled caster assembly of FIG. 1A which includes the caster yoke of FIGS. 2A, 2B, 2C, 2D and 2E;

[0019] FIGS. 4A and 4B (SHEETS 13 AND 14 OF 16 SHEETS) depict views of the second wheeled caster assembly of FIG. 1B, and the second wheeled caster assembly includes the caster yoke of FIGS. 2A, 2B, 2C, 2D and 2E. FIG. 4A depicts an exploded view. FIG. 4B depicts a side view;

[0020] FIGS. 5A and 5B (SHEETS 15 AND 16 OF 16 SHEETS) depict views of embodiments of the third wheeled caster assembly of FIG. 1C, and the third wheeled caster assembly includes the caster yoke of FIGS. 2A, 2B, 2C, 2D and 2E. FIG. 5A depicts an exploded view. FIG. 5B depicts a side view.

[0021] The drawings are not necessarily to scale and may be illustrated by phantom lines, diagrammatic representations and fragmentary views. In certain instances, details unnecessary for an understanding of the embodiments (and/or details that render other details difficult to perceive) may have been omitted.

[0022] Corresponding reference characters indicate corresponding components throughout the several figures of the drawings. Elements in the several figures are illustrated for simplicity and clarity and have not been drawn to scale. The dimensions of some of the elements in the figures may be emphasized relative to other elements for facilitating an understanding of the various disclosed embodiments. In addition, common, but well-understood, elements that are useful or necessary in commercially feasible embodiments are often not depicted to provide a less obstructed view of the embodiments of the present disclosure.

[0023] LISTING OF REFERENCE NUMERALS USED IN THE DRAWINGS

[0024] 101 first mounting feature
 [0025] 102 second mounting feature
 [0026] 103 third mounting feature
 [0027] 104 fourth mounting feature
 [0028] 105 fifth mounting feature
 [0029] 106 sixth mounting feature
 [0030] 107 seventh mounting feature
 [0031] 108 eighth mounting feature
 [0032] 109 ninth mounting feature
 [0033] 110 tenth mounting feature
 [0034] 111 eleventh mounting feature
 [0035] 112 caster yoke
 [0036] 300 first wheeled caster assembly
 [0037] 301 first caster component
 [0038] 302 second caster component
 [0039] 303 third caster component
 [0040] 304 fourth caster component
 [0041] 305 fifth caster component
 [0042] 306 sixth caster component
 [0043] 307 seventh caster component
 [0044] 308 eighth caster component
 [0045] 309 ninth caster component
 [0046] 310 tenth caster component
 [0047] 311 eleventh caster component
 [0048] 312 twelfth caster component
 [0049] 313 thirteenth caster component
 [0050] 314 fourteenth caster component
 [0051] 315 fifteenth caster component
 [0052] 316 sixteenth caster component
 [0053] 317 seventeenth caster component
 [0054] 318 eighteenth caster component
 [0055] 319 nineteenth caster component
 [0056] 320 twentieth caster component
 [0057] 321 twenty-first caster component
 [0058] 322 twenty-second caster component
 [0059] 323 twenty-third caster component
 [0060] 324 twenty-fourth caster component
 [0061] 325 twenty-fifth caster component
 [0062] 326 twenty-sixth caster component
 [0063] 327 twenty-seventh caster component
 [0064] 328 twenty-eighth caster component
 [0065] 400 second wheeled caster assembly
 [0066] 401 first caster component
 [0067] 402 second caster component
 [0068] 403 third caster component

[0069] 404 fourth caster component
 [0070] 405 fifth caster component
 [0071] 406 sixth caster component
 [0072] 407 seventh caster component
 [0073] 408 eighth caster component
 [0074] 409 ninth caster component
 [0075] 410 tenth caster component
 [0076] 411 eleventh caster component
 [0077] 412 twelfth caster component
 [0078] 413 thirteenth caster component
 [0079] 500 third wheeled caster assembly
 [0080] 501 first caster component
 [0081] 502 second caster component
 [0082] 503 third caster component
 [0083] 504 fourth caster component
 [0084] 505 fifth caster component
 [0085] 506 sixth caster component
 [0086] 507 seventh caster component
 [0087] 508 eighth caster component
 [0088] 509 ninth caster component
 [0089] 510 tenth caster component
 [0090] 511 eleventh caster component

DETAILED DESCRIPTION OF THE NON-LIMITING EMBODIMENT(S)

[0091] The following detailed description is merely exemplary and is not intended to limit the described embodiments or the application and uses of the described embodiments. As used, the word “exemplary” or “illustrative” means “serving as an example, instance, or illustration.” Any implementation described as “exemplary” or “illustrative” is not necessarily to be construed as preferred or advantageous over other implementations. All of the implementations described below are exemplary implementations provided to enable persons skilled in the art to make or use the embodiments of the disclosure and are not intended to limit the scope of the disclosure. The scope of the invention is defined by the claims. For the description, the terms “upper,” “lower,” “left,” “rear,” “right,” “front,” “vertical,” “horizontal,” and derivatives thereof shall relate to the examples as oriented in the drawings. There is no intention to be bound by any expressed or implied theory in the preceding Technical Field, Background, Summary or the following detailed description. It is also to be understood that the devices and processes illustrated in the attached drawings, and described in the following specification, are exemplary embodiments (examples), aspects and/or concepts defined in the appended claims. Hence, dimensions and other physical characteristics relating to the embodiments disclosed are not to be considered as limiting, unless the claims expressly state otherwise. It is understood that the phrase “at least one” is equivalent to “a”. The aspects (examples, alterations, modifications, options, variations, embodiments and any equivalent thereof) are described regarding the drawings. It should be understood that the invention is limited to the subject matter provided by the claims, and that the invention is not limited to the particular aspects depicted and described.

[0092] FIGS. 1A, 1B and 1C depict views of embodiments of a set of wheeled caster assemblies having a first wheeled caster assembly 300 (depicted in FIG. 1A), a second wheeled caster assembly 400 (depicted in FIG. 1B), and a third wheeled caster assembly 500 (depicted in FIG. 1C). FIG. 1A depicts a perspective view. FIG. 1B depicts a perspective view. FIG. 1C depicts a perspective view.

[0093] The first wheeled caster assembly 300, the second wheeled caster assembly 400, and the third wheeled caster assembly 500 are members of the set of wheeled caster assemblies. Each of the first wheeled caster assembly 300, the second wheeled caster assembly 400, and the third wheeled caster assembly 500 includes a caster yoke 112, which is depicted in any one of FIGS. 2A to 2E. The caster yoke is preferably formed (from a metal alloy, for instance) as a unitary body. The caster yoke 112 is a common element of (deployed in) each member of the set of wheeled assemblies. A technical effect (result or benefit) of using the same caster yoke 112 to form a set of wheeled caster assemblies is a reduction, at least in part, in the cost of manufacturing any one of the first wheeled caster assembly 300, the second wheeled caster assembly 400, and the third wheeled caster assembly 500 using different caster yokes, as is the custom in the prior art.

[0094] It will be appreciated that by allowing selected wheeled-caster components to be selectively mounted on the same caster yoke structure 112, various types of wheeled-caster structures having corresponding wheeled-caster functions may be constructed. Such functions may include, without limitation, wheel braking to stop the rotation of the wheel (s) of the caster assembly about its rotational axis, and swivel braking to allow the caster assembly to selectively rotate about a vertical axis.

[0095] Thus, by using utilizing the same caster yoke 112 for different types of wheeled caster assemblies, the cost of manufacturing these different types of wheeled caster assemblies (such as, the first wheeled caster assembly 300 depicted in FIG. 3A, the second wheeled caster assembly 400 depicted in FIG. 4A, and the third wheeled caster assembly 500 depicted in FIG. 5A) may be reduced (at least in part), since these wheeled caster assemblies share the same form of caster yoke 112. By deploying the same form of caster yoke 112 in each of the different wheeled caster assemblies, each of the wheeled caster assemblies does not need a separately designed and constructed (and stocked) caster yoke, which caster yoke is a key component in the construction of wheeled caster assemblies and potentially the largest, heaviest and most expensive component of each such caster assembly. Accordingly, the caster yoke 112 permits unique functional capabilities for different sorts of wheeled caster assemblies (depending on the functionality desired for a particular wheeled caster assembly). In this manner, the caster yoke 112 may be deployed to construct a set of wheeled caster assemblies that has a relatively large number of possible wheeled-caster functions. It will be appreciated that by changing the structure (using selected wheeled-caster components) to be attached (fixed) to (mounted on) the caster yoke 112, various types of wheeled-caster structures having corresponding wheeled caster functions can be selectively constructed (manufactured). Alternatively, the caster yoke 112 may be deployed in a wheeled caster assembly that has a relatively few number of wheeled-caster functions (such as a single wheeled-caster function), if so desired.

[0096] The first wheeled caster assembly 300, the second wheeled caster assembly 400 and the third wheeled caster assembly 500 are configured to be selectively attached (coupled, fixedly attached either directly or indirectly) to an object (known and not depicted) once selectively connected to the underside of the object. In this manner, the first wheeled caster assembly 300, the second wheeled caster assembly 400 and the third wheeled caster assembly 500 are configured to

enable the object to be moved (along a working surface). Embodiments of the object include (and are not limited to) a bed, a stretcher, a gurney, an office chair, a large piece of medical diagnostic equipment, a palette, a wagon, a cart, and the like.

[0097] The first wheeled caster assembly 300, the second wheeled caster assembly 400, and the third wheeled caster assembly 500 preferably each have unique functional capabilities relative to each other.

[0098] In accordance with a first major aspect (as depicted in FIGS. 2A to 2E), the caster yoke 112 is for construction of a set of wheeled caster assemblies (as depicted in, for example, FIGS. 1A, 1B and 1C). The set of wheeled caster assemblies includes (and is not limited to) the first wheeled caster assembly 300 of FIG. 1A, the second wheeled caster assembly 400 of FIG. 1B, and the third wheeled caster assembly 500 of FIG. 1C. Each wheeled caster assembly shares the caster yoke 112 and each member of the set of wheeled caster assemblies has a unique functional capability relative to each other member of the set. The caster yoke 112 includes mounting features (such as, a first mounting feature 101, a second mounting feature 102 and a third mounting feature 103, etc.). The mounting features of the caster yoke 112 are each configured to fit (selectively connect, selectively interface, couple, etc.), and any equivalent thereof, with respective caster components of the wheeled caster assemblies 300, 400, 500 as depicted in FIGS. 1A, 1B, and 1C, respectively, which belong to the set of wheeled caster assemblies.

[0099] Referring to the embodiment depicted in FIG. 3B, a first mounting feature 101 of the caster yoke 112 is configured to selectively mount a first caster component 301 of the first wheeled caster assembly 300.

[0100] Referring to the embodiment depicted in FIG. 4B, a second mounting feature 102 of the caster yoke 112 is spaced apart from the first mounting feature 101. The second mounting feature 102 is configured to selectively mount a second caster component 402 of the second wheeled caster assembly 400.

[0101] Referring to the embodiment depicted in FIG. 5B, a third mounting feature 103 of the caster yoke 112 is spaced apart from the first mounting feature 101 and is also spaced apart from the second mounting feature 102. The third mounting feature 103 is configured to selectively mount a third caster component 503 of the third wheeled caster assembly 500.

[0102] Referring to the embodiments depicted in FIGS. 2A to 2E (in general terms), each of the mounting features 101 to 111 of the caster yoke 112 is configured to selectively fit (interface, receive, interact) with a selected component of any one of the wheeled caster assemblies 300, 400, 500 (depicted in FIGS. 1A, 1B, and 1C, respectively).

[0103] Specifically, the caster yoke 112 includes (provides) mounting features that are spaced apart from each other. The mounting features of caster yoke 112 include (and are not limited to): a first mounting feature 101, a second mounting feature 102, a third mounting feature 103, a fourth mounting feature 104, a fifth mounting feature 105, a sixth mounting feature 106, a seventh mounting feature 107, an eighth mounting feature 108, a ninth mounting feature 109, a tenth mounting feature 110, and an eleventh mounting feature 111.

[0104] It will be appreciated that the first mounting feature 101 may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The first mounting feature 101 is configured to selectively mount a compo-

nent of the first wheeled caster assembly **300** (as depicted in FIG. 3B). For instance, the first mounting feature **101** includes a post (also called a pin extension, a protuberance, etc.), and any equivalent thereof, extending from the caster yoke **112**. The first mounting feature **101** extends across opposite sidewalls of the caster yoke **112**.

[0105] It will be appreciated that the second mounting feature **102** may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The second mounting feature **102** is configured to selectively mount a component of the first wheeled caster assembly **300** (FIG. 3B). The second mounting feature **102** is configured to selectively mount a component of the second wheeled caster assembly **400** (FIG. 4B). For instance, the second mounting feature **102** includes a hole (a shaped void), and any equivalent thereof, defined on (formed in) opposite lateral sidewalls of the caster yoke **112** at a lower section of the caster yoke **112**. The second mounting feature **102** is configured to receive a pin (a rod, a pin extension, etc.), and any equivalent thereof, provided by the component of any one of the first wheeled caster assembly **300** (FIG. 3A) or the second wheeled caster assembly **400** (FIG. 4A).

[0106] It will be appreciated that the third mounting feature **103** may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The third mounting feature **103** is configured to selectively mount a component of the first wheeled caster assembly **300** (FIG. 3C). The third mounting feature **103** is configured to selectively mount a component of the second wheeled caster assembly **400** (FIG. 4B). The third mounting feature **103** is configured to selectively mount a component of the third wheeled caster assembly **500** (FIG. 5B). For instance, the third mounting feature **103** includes a slot, and any equivalent thereof, defined by (formed in) the caster yoke **112** (at a front portion of the caster yoke **112**). The third mounting feature **103** is positioned at a frontal section of the caster yoke **112**.

[0107] It will be appreciated that the fourth mounting feature **104** may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The fourth mounting feature **104** is configured to selectively mount a component of the first wheeled caster assembly **300** (FIG. 3B). For instance, the fourth mounting feature **104** includes a hole, and any equivalent thereof, defined by (formed in) the caster yoke **112**. The fourth mounting feature **104** is formed on opposite sidewalls of the caster yoke **112** in a middle zone of the caster yoke **112**. The fourth mounting feature **104** extends across opposite lateral sidewalls of the caster yoke **112**. The fourth mounting feature **104** is configured to receive a pin (rod, pin extension), and any equivalent thereof.

[0108] It will be appreciated that the fifth mounting feature **105** may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The fifth mounting feature **105** is configured to selectively mount a component of the first wheeled caster assembly **300** (FIG. 3B). For instance, the fifth mounting feature **105** includes a hole, and any equivalent thereof, defined by (formed in) the caster yoke **112** (at a middle zone of the caster yoke **112**). The fifth mounting feature **105** extends between opposite lateral sides (the opposite lateral sidewalls) of the caster yoke **112**. The fifth mounting feature **105** is configured to receive a pin (a rod), and any equivalent thereof.

[0109] It will be appreciated that the sixth mounting feature **106** may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The sixth mount-

ing feature **106** is configured to selectively mount a component of the first wheeled caster assembly **300** (FIG. 3C). For instance, the sixth mounting feature **106** includes a post, and any equivalent thereof, extending from the opposite lateral sidewalls of the caster yoke **112** at a frontal portion of the caster yoke **112**.

[0110] It will be appreciated that the seventh mounting feature **107** may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The seventh mounting feature **107** is configured to selectively mount a component of the first wheeled caster assembly **300** (FIG. 3C). For instance, the seventh mounting feature **107** includes an elongated slot, and any equivalent thereof, defined by (formed in) the caster yoke **112**. The seventh mounting feature **107** is defined along an arched portion along a top section of the caster yoke **112**. The seventh mounting feature **107** is configured to receive a pin (a rod, a pin extension), and any equivalent thereof. The seventh mounting feature **107** is located above the sixth mounting feature **106**.

[0111] It will be appreciated that the eighth mounting feature **108** may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The eighth mounting feature **108** is configured to selectively mount a component of the first wheeled caster assembly **300** (FIG. 3C). For instance, the eighth mounting feature **108** includes a hole, and any equivalent thereof, defined by (formed in) the caster yoke **112**. The eighth mounting feature **108** is located along a bottom rear section of the caster yoke **112** on the opposite sidewalls thereof. The eighth mounting feature **108** is configured to receive a pin (a rod, a pin extension), and any equivalent thereof. The eighth mounting feature **108** is located rearward of the fourth mounting feature **104** along a lower rear zone of the caster yoke **112**.

[0112] It will be appreciated that the ninth mounting feature **109** may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The ninth mounting feature **109** is configured to selectively mount a component of the first wheeled caster assembly **300** (FIG. 3C). The ninth mounting feature **109** is configured to selectively mount a component of the second wheeled caster assembly **400** (FIG. 4B). For instance, the ninth mounting feature **109** includes a slot, and any equivalent thereof, defined by (formed in) the caster yoke **112**. The ninth mounting feature **109** is located between a pair of posts extending from a lower rear section of the caster yoke **112**. The ninth mounting feature **109** is located behind the fourth mounting feature **104** along a lower rear zone of the caster yoke **112**.

[0113] It will be appreciated that the tenth mounting feature **110** may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The tenth mounting feature **110** is configured to selectively mount a component of the first wheeled caster assembly **300** (FIG. 3D). For instance, the tenth mounting feature **110** includes a notch, and any equivalent thereof, defined by (formed in) the caster yoke **112**. The tenth mounting feature **110** is provided at a lower frontal section of the caster yoke **112**. The tenth mounting feature **110** is located below the sixth mounting feature **106** along a lower edge of the caster yoke **112**.

[0114] It will be appreciated that the eleventh mounting feature **111** may be utilized by any one of the wheeled caster assemblies (as depicted in FIGS. 1A, 1B and 1C). The eleventh mounting feature **111** is configured to selectively mount a component of the first wheeled caster assembly **300** (FIG. 3D). The eleventh mounting feature **111** is configured to

selectively mount a component of the second wheeled caster assembly **400** (FIG. 4B). The eleventh mounting feature **111** is configured to selectively mount a component of the third wheeled caster assembly **500** (FIG. 5B). For instance, the eleventh mounting feature **111** includes a cavity, and any equivalent thereof, defined by (formed in) the caster yoke **112**. The eleventh mounting feature **111** is defined at a rear lower section of the caster yoke **112**. The eleventh mounting feature **111** is located above the ninth mounting feature **109**.

[0115] FIGS. 3A to 3D depict views of embodiments of the first wheeled caster assembly **300** of FIG. 1A. The first wheeled caster assembly **300** includes the caster yoke **112** of any one of FIGS. 2A, 2B, 2C, 2D and 2E. FIG. 3A depicts an exploded view. FIG. 3B depicts a side view. FIG. 3C depicts a frontal perspective view. FIG. 3D depicts a rear perspective view.

[0116] The first wheeled caster assembly **300** includes a first caster component **301** (as depicted in FIGS. 3A and 3B). The caster yoke **112** includes the first mounting feature **101** (as depicted in FIGS. 2A, 2B, 2C, 2D, and 3B) configured to selectively mount the first caster component **301** of the first wheeled caster assembly **300**.

[0117] In accordance with an embodiment, the components of the first wheeled caster assembly **300** further include the first caster component **301**, a second caster component **302**, a third caster component **303** (such as, a wheel or a pair of wheels), a fourth caster component **304**, a fifth caster component **305**, a sixth caster component **306**, a seventh caster component **307**, an eighth caster component **308**, a ninth caster component **309**, a tenth caster component **310**, an eleventh caster component **311**, a twelfth caster component **312**, a thirteenth caster component **313**, a fourteenth caster component **314**, a fifteenth caster component **315**, a sixteenth caster component **316**, a seventeenth caster component **317**, an eighteenth caster component **318**, a nineteenth caster component **319**, a twentieth caster component **320**, a twenty-first caster component **321**, a twenty-second caster component **322**, a twenty-third caster component **323**, a twenty-fourth caster component **324**, a twenty-fifth caster component **325**, a twenty-sixth caster component **326**, a twenty-seventh caster component **327**, and a twenty-eighth caster component **328**.

[0118] For instance, the first caster component **301** may include a main-cam pin. The first caster component **301** is configured to selectively mount the first mounting feature **101** of the caster yoke **112**. For instance, the second caster component **302** may include a top plate assembly. For instance, the third caster component **303** may include a wheel assembly. The fourth caster component **304** may include a trim cover assembly. The fourth caster component **304** is configured to selectively mount the eleventh mounting feature **111** of the caster yoke **112**. For instance, the fifth caster component **305** may include a bushing assembly. For instance, the sixth caster component **306** may include a flanged-bushing assembly (for the eighth caster component **308**). For instance, the seventh caster component **307** may include a brake-arm pin. For instance, the eighth caster component **308** may include a brake-arm assembly. The eighth caster component **308** is configured to selectively mount the tenth mounting feature **110** of the caster yoke **112**. The ninth caster component **309** may include a pin assembly. The ninth caster component **309** is configured to selectively mount the fifth mounting feature **105** of the caster yoke **112**. The tenth caster component **310** includes a flanged bushing. The eleventh caster component **311** includes a main cam. The eleventh

caster component **311** is configured to selectively mount the fifth mounting feature **105** of the caster yoke **112**. The twelfth caster component **312** may include a center-locking cam. The thirteenth caster component **313** includes a brake cam. The fourteenth caster component **314** may include a center-lock bushing. The fifteenth caster component **315** includes a center-locking pin. The fifteenth caster component **315** is configured to selectively mount the eighth mounting feature **108** of the caster yoke **112**. The sixteenth caster component **316** may include a center-locking spring. The seventeenth caster component **317** includes a torsion spring. The eighteenth caster component **318** may include a brake-system frame. The eighteenth caster component **318** is configured to selectively mount the fourth mounting feature **104** of the caster yoke **112**. The nineteenth caster component **319** may include a push cam. The twentieth caster component **320** includes a push-cam spring. The twenty-first caster component **321** may include a push-cam pin. The twenty-second caster component **322** may include a brake pedal. The twenty-second caster component **322** is configured to selectively mount the seventh mounting feature **107** of the caster yoke **112**. The twenty-third caster component **323** includes a connector (a bolt). The twenty-fourth caster component **324** includes a washer. The twenty-fifth caster component **325** may include a locating washer. The twenty-sixth caster component **326** may include a bearing assembly. The twenty-seventh caster component **327** may include a retainer (retaining ring). The twenty-eighth caster component **328** may include a center-lock bracket.

[0119] FIGS. 4A and 4B depict views of embodiments of the second wheeled caster assembly **400** of FIG. 1B. The second wheeled caster assembly **400** also includes the caster yoke **112** of any one of FIGS. 2A, 2B, 2C, 2D and 2E. FIG. 4A depicts an exploded view. FIG. 4B depicts a side view.

[0120] The second wheeled caster assembly **400** includes a second caster component **402** (as depicted in FIGS. 4A and 4B). The caster yoke **112** includes the second mounting feature **102** (as depicted in FIGS. 2A, 2B, 2C, 2D and 4B) spaced apart from the first mounting feature **101**. The second mounting feature **102** is configured to selectively mount the second caster component **402** of the second wheeled caster assembly **400**.

[0121] The components of the second wheeled caster assembly **400** further include a first caster component **401**, a second caster component **402**, a third caster component **403**, a fourth caster component **404**, a fifth caster component **405**, a sixth caster component **406**, a seventh caster component **407**, an eighth caster component **408**, a ninth caster component **409**, a tenth caster component **410**, an eleventh caster component **411**, a twelfth caster component **412**, and a thirteenth caster component **413**.

[0122] The first caster component **401** may include a stem assembly. The second caster component **402** may include a spring pin assembly. The second caster component **402** is configured to selectively mount the second mounting feature **102** of the caster yoke **112**. The second caster component **402** is configured to selectively mount the ninth mounting feature **109** of the caster yoke **112**. The third caster component **403** may include a cover assembly. The third caster component **403** is configured to selectively mount the eleventh mounting feature **111** of the caster yoke **112**. The fourth caster component **404** may include a bearing assembly. The fifth caster component **405** includes a wheel assembly. The sixth caster component **406** may include a lever assembly. The seventh caster component **407** includes a bushing assembly. The

eighth caster component **408** may include a retaining ring. The ninth caster component **409** may include a brake arm. The tenth caster component **410** includes a nut. The eleventh caster component **411** may include a washer. The twelfth caster component **412** includes a set screw. The thirteenth caster component **413** may include a spring assembly.

[0123] FIGS. **5A** and **5B** depict views of embodiments of the third wheeled caster assembly **500** of FIG. **1C**. The third wheeled caster assembly **500** includes the caster yoke **112** of any one of FIGS. **2A**, **2B**, **2C**, **2D** and **2E**. FIG. **5A** depicts an exploded view. FIG. **5B** depicts a side view.

[0124] The third wheeled caster assembly **500** includes a third caster component **503** (as depicted in FIGS. **5A** and **5B**). The caster yoke **112** may include the third mounting feature **103** (as depicted in FIGS. **2A**, **2C**, **2D** and **5B**) spaced apart from the first mounting feature **101** and from the second mounting feature **102**. The third mounting feature **103** is configured to selectively mount the third caster component **503** of the third wheeled caster assembly **500**.

[0125] The components of the third wheeled caster assembly **500** further includes a first caster component **501**, a second caster component **502**, a third caster component **503**, a fourth caster component **504**, a fifth caster component **505**, a sixth caster component **506**, a seventh caster component **507**, an eighth caster component **508**, a ninth caster component **509**, a tenth caster component **510**, and an eleventh caster component **511**.

[0126] The first caster component **501** may include a post assembly. The second caster component **502** may include a wheel assembly. The third caster component **503** may include a cover assembly. The third caster component **503** is configured to selectively mount the third mounting feature **103** of the caster yoke **112**. The third mounting feature **103** is configured to selectively fit with and to selectively mount a selected component of any one of the wheeled caster assemblies **300**, **400**, **500**. The fourth caster component **504** may include a set screw. The fifth caster component **505** may include a washer. The sixth caster component **506** may include a nut. The seventh caster component **507** may include a set screw. The eighth caster component **508** may include a brake arm.

[0127] The ninth caster component **509** may include a bushing assembly. The tenth caster component **510** may include a retaining ring. The eleventh caster component **511** may include a set screw.

[0128] This written description uses examples to disclose the invention, including the best mode, and also to enable any person skilled in the art to make and use the invention. The patentable scope of the invention is defined by the claims, and may include other examples that occur to those skilled in the art. Such other examples are within the scope of the claims if they have structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal language of the claims.

[0129] It may be appreciated that the assemblies, components, and modules described above may be connected with each other as required to perform desired functions and tasks within the scope of persons of skill in the art to make such combinations and permutations without having to describe each and every one in explicit terms. There is no particular assembly or component that may be superior to any of the equivalents available to the person skilled in art. There is no particular mode of practicing the disclosed subject matter that

is superior to others, so long as the functions may be performed. It is believed that all the crucial aspects of the disclosed subject matter have been provided in this document. It is understood that the scope of the present invention is limited to the scope provided by the independent claim(s), and it is also understood that the scope of the present invention is not limited to: (i) the dependent claims, (ii) the detailed description of the non-limiting embodiments, (iii) the summary, (iv) the abstract, and/or (v) the description provided outside of this document (that is, outside of the instant application as filed, as prosecuted, and/or as granted). It is understood, for this document, that the phrase “includes” is equivalent to the word “comprising.” The foregoing has outlined the non-limiting embodiments (examples). The description is made for particular non-limiting embodiments (examples). It is understood that the non-limiting embodiments are merely illustrative as examples.

I claim:

1. A caster yoke for use in the manufacture of a set of wheeled caster assemblies, with each wheeled caster assembly of the set of wheeled caster assemblies having unique functional capabilities relative to each other wheeled caster assembly of the set, such unique functional capabilities arising from a respective configuration of one or more caster components mounted on the caster yoke, the caster yoke having all of the mounting features necessary to selectively mount all of the caster components of the set of wheeled caster assemblies on the caster yoke.

2. A caster yoke for use in the manufacture of a set of wheeled caster assemblies having a first wheeled caster assembly including a first caster component, a second wheeled caster assembly including a second caster component, and a third wheeled caster assembly including a third caster component, the first wheeled caster assembly, the second wheeled caster assembly, and the third wheeled caster assembly each having a unique functional capabilities relative to each other, the caster yoke comprising:

a first mounting feature configured to selectively mount the first caster component of the first wheeled caster assembly;

a second mounting feature spaced apart from the first mounting feature, with the second mounting feature being configured to selectively mount the second caster component of the second wheeled caster assembly; and a third mounting feature spaced apart from the first mounting feature and from the second mounting feature, with the third mounting feature configured to

selectively mount the third caster component of the third wheeled caster assembly.

3. The caster yoke of claim 2, wherein the caster yoke forms a unitary body.

4. The caster yoke of claim 2, wherein the caster yoke is a common element for each member of a set of wheeled assemblies having the first wheeled caster assembly, the second wheeled caster assembly, and the third wheeled caster assembly.

5. The caster yoke of claim 2, wherein each mounting feature of the caster yoke is configured to selectively mount a selected component of any one of the first wheeled caster assembly, the second wheeled caster assembly, and the third wheeled caster assembly.

6. The caster yoke of claim 2, wherein the caster yoke includes mounting features spaced apart from each other, with the mounting features including:

the first mounting feature;
 the second mounting feature;
 the third mounting feature;
 a fourth mounting feature;
 a fifth mounting feature;
 a sixth mounting feature;
 a seventh mounting feature;
 an eighth mounting feature;
 a ninth mounting feature;
 a tenth mounting feature; and
 an eleventh mounting feature.

7. The caster yoke of claim 2, wherein the first mounting feature includes a post extending from the caster yoke, and the first mounting feature extending across opposite sidewalls of the caster yoke.

8. The caster yoke of claim 2, wherein the second mounting feature includes a hole defined on opposite lateral sidewalls of the caster yoke at a lower section of the caster yoke, and the second mounting feature is configured to receive a pin provided by a component of any one of the first wheeled caster assembly, the second wheeled caster assembly, and the third wheeled caster assembly.

9. The caster yoke of claim 2, wherein the third mounting feature includes a slot defined by the caster yoke at a front portion of the caster yoke, and the third mounting feature being positioned at a frontal section of the caster yoke.

10. The caster yoke of claim 2, wherein the caster yoke includes a fourth mounting feature including a hole defined by the caster yoke, the fourth mounting feature is formed on opposite sidewalls of the caster yoke in a middle zone of the caster yoke, the fourth mounting feature extends across opposite lateral sidewalls of the caster yoke, and the fourth mounting feature is configured to receive a pin.

11. The caster yoke of claim 2, wherein the caster yoke includes a fifth mounting feature including a hole defined by the caster yoke at a middle zone of the caster yoke, the fifth mounting feature extends between opposite lateral sides of the caster yoke, and the fifth mounting feature is configured to receive a pin.

12. The caster yoke of claim 2, wherein the caster yoke includes a sixth mounting feature having a post extending from opposite lateral sidewalls of the caster yoke at a frontal portion of the caster yoke.

13. The caster yoke of claim 2, wherein the caster yoke includes a seventh mounting feature having an elongated slot defined by the caster yoke, the seventh mounting feature is

defined along an arched portion along a top section of the caster yoke, and the seventh mounting feature is configured to receive a pin.

14. The caster yoke of claim 2, wherein the caster yoke includes an eighth mounting feature having a hole defined by the caster yoke, the eighth mounting feature being located along a bottom rear section of the caster yoke on opposite sidewalls thereof, and the eighth mounting feature being configured to receive a pin.

15. The caster yoke of claim 2, wherein the caster yoke includes a ninth mounting feature having a slot defined by the caster yoke, and the ninth mounting feature being located between a pair of posts extending from a lower rear section of the caster yoke.

16. The caster yoke of claim 2, wherein the caster yoke includes a tenth mounting feature having a notch defined by the caster yoke, the tenth mounting feature being provided at a lower frontal section of the caster yoke.

17. The caster yoke of claim 2, wherein the caster yoke includes an eleventh mounting feature having a cavity defined by the caster yoke, and the eleventh mounting feature being defined at a rear lower section of the caster yoke.

18. A set of wheeled caster assemblies, comprising:

a caster yoke including a first mounting feature, a second mounting feature spaced apart from the first mounting feature, and a third mounting feature spaced apart from the first mounting feature and from the second mounting feature;

a first wheeled caster assembly including a first caster component configured to selectively mount the first mounting feature of the caster yoke;

a second wheeled caster assembly including a second caster component configured to selectively mount the second mounting feature of the caster yoke;

and

a third wheeled caster assembly including a third caster component configured to selectively mount the third mounting feature of the caster yoke; and

the first wheeled caster assembly, the second wheeled caster assembly, and the third wheeled caster assembly each have a unique functional capability relative to each other.

* * * * *